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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/622,421	07/18/2003	Paul B. Merkel	85538PAL	4963
7590 02/06/2008 Paul A. Leipold Patent Legal Staff Eastman Kodak Company 343 State Street Rochester, NY 14650-2201			EXAMINER SCHWARTZ, PAMELA R	
			ART UNIT 1794	PAPER NUMBER
			MAIL DATE 02/06/2008	DELIVERY MODE PAPER

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The time period for reply, if any, is set in the attached communication.

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APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
10622421	7/18/2003	MERKEL ET AL.	85538PAL

Paul A. Leipold
Patent Legal Staff
Eastman Kodak Company
343 State Street
Rochester, NY 14650-2201

EXAMINER

Pamela R.. Schwartz

ART UNIT	PAPER
1794	20080201

DATE MAILED:

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Commissioner for Patents

The reply brief filed November 20, 2007 has been entered and considered. The application has been forwarded to the Board of Patent Appeals and Interferences for decision on the appeal.

Responsive to the reply brief under 37 CFR 41.41 filed on November 20, 2007, a supplemental Examiner's Answer is set forth below. The following remarks are provided to correct and clarify the record.

1. In the Grounds of Rejection of the Examiner's Answer of September 20, 2007, the statement of the second ground of rejection appearing on page 6 of the Examiner's Answer should read:

Claims 1, 4, 6-8, 11, 12, and 22-34 stand finally rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano et al. (6,919,109) in view of Tsuchiya et al. (6,495,242) and further in view of Niu et al. (6,689,433) for reasons set forth above and for the reasons provided below.

2. In the Grounds of Rejection of the Examiner's Answer of September 20, 2007, the statement of the third ground of rejection appearing on page 7 of the Examiner's Answer should read:

Claims 1, 4, 6-8, 11, 12 and 22-32 and 34 stand finally rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchiya et al. (6,495,242). It is noted that the rejection of claim 33 over Tsuchiya et al. alone has been withdrawn.

3. In the Response to Argument portion of the Examiner's Answer of September 20, 2007, on page 10, lines 8-11, the Examiner incorrectly stated that the acidity of the coating solutions of the Nakano et al. reference was irrelevant to all claims but claim 33. The pH is in fact a relevant factor in determining the charge of the silica, but it must be considered in the context of other relevant factors. The examiner maintains that as used in the ink jet recording art, the term "colloidal silica," when not further modified, refers to anionic silica (see for example Niu et al., 6,689,433, col. 9, lines 41-51). In the Reply Brief, appellants argue that even if the silica starts out anionic, it has been treated "by milling in the presence of a cationic dispersant" and that since "dispersants function by attaching to the surface of the particles to be dispersed, the fine particles of Nakano et al will a[c]quire a cationic surface charge associated with such attached dispersant, especially at the relatively low pH of the coating solution A of Nakano et al. (see col. 27, lines 46-49)." Contrary to appellants' position, the relationship between the cationic polymeric dispersant of the reference with the surface of the silica particles is not that straight forward. The reference discloses cationic polymeric dispersants for use with both anionic particles (silica) and cationic particles (alumina). It therefore seems unlikely that the dispersant functions by attaching to the particle surfaces. Even if the cationic polymer does attach to the surface of the silica to some degree, the amount of cationic charge that is transferred to the silica is unknown. The degree of reaction relies on many factors, including the amount of cationic polymer present, the pH and the molecular weight of the cationic polymer. Long polymer chains may wrap themselves around the silica particles and may have difficulty reaching the silica surface in large

number, thereby being less likely to transfer a significant charge to the silica. Therefore, the degree of surface bonding with the cationic polymer and the affect on the charge of the silica are unknown.

Appellants argue that the pH of the silica solution A during formation indicates that the silica is cationic. Even if the silica is in a cationic solution during formation of the coloring agent accepting layer, it is applied over or under a basic coating solution either simultaneously therewith or before the first coating layer shows a falling drying rate (col. 14, lines 61 to col. 15, lines 21). This results in a surface pH in the final layer as high as 8 (col. 16, lines 45-49). Under these conditions, it is unlikely that the silica would be cationic. The reference discloses adding acid to adjust the pH to a range of 3 to 8, meaning that prior to that adjustment, when the acid and basic solutions were applied, the pH would have been even higher (see col. 16, lines 45-50).

Finally, the reference discloses at col. 18, lines 23-31, an optional surface treatment of the inorganic fine particles with a silane coupling agent. This optional treatment is the type of surface treatment that could render the particle surfaces cationic if enough charge was transferred to them. But if the required cationic polymer dispersant was intended to attach to the surface of the particles as argued by appellants, why would this optional surface treatment step be suggested? It would seem to interfere with attachment of the cationic polymeric dispersant to the particle surfaces.


The silica of Nakano et al. starts out anionic, and there is nothing of record to show that it has been converted to cationic silica, the claims read on the prior art.


With respect to pH adjustment to the coating solution of Tsuchiya et al., appellants rely on pH values from the reference examples to allege that the surface pH is acidic. A range of surface pH values is not disclosed by the reference. While cationic polymer is present in the examples, it is an optional component (col. 9, lines 1-2 disclose a preference for a cationic mordant). But even if the pH of the coating were always acidic, it does not make the teaching of Nakano et al. to adjust pH within a range of 3 to 8 to improve resistance to yellowing less relevant (col. 16, lines 45-48).

Appellants argue that Nakano et al. disclose acid for pH adjustment and that if the pH is already acidic, there would be no reason to add the acid. However, since Nakano et al. disclose a pH range for obtaining an improvement, one of ordinary skill in the art would have found it obvious to modify the pH using either acid or base to obtain values within the range taught by the reference in order to obtain the improvement.

4. Appellant may file another reply brief in compliance with 37 CFR 41.41 within two months of the date of mailing of this supplemental examiner's answer. Extensions of time under 37 CFR 1.136(a) are not applicable to this two month time period. See 37 CFR 41.43(b)-(c).

A Technology Center Director or designee has approved this supplemental examiner's answer by signing below:


Romulo Delmendo, TC 1700 Appeal Conferee

PRSchwartz 
February 1, 2008


MILTON I. CANO
SUPERVISORY PATENT EXAMINER